

MULTI-LAYER ARTICLES AND METHODS OF MAKING SAME

Cross-Reference to Related Applications

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This application claims priority under 35 U.S.C. §119(e)(1) to commonly owned U.S. Provisional Patent Application Serial Number 60/166,140, 60/166,145 and 60/166,297, filed November 18, 1999, and
5 entitled "Superconductor Articles and Compositions and Methods for Making Same," which is hereby incorporated by reference.

Background of the Invention

The invention relates to superconductor articles, and compositions and methods for making superconductor articles.

10 Multi-layer articles can be used in a variety of applications. For example, superconductors, including oxide superconductors, can be formed of multi-layer articles. Typically, such superconductors include a layer of superconductor material and a layer, commonly referred to as a substrate, that can enhance the mechanical strength of the multi-layer article.

15 Generally, in addition to enhancing the strength of the multi-layer superconductor, the substrate should exhibit certain other properties. For example, the substrate should have a low Curie temperature so that the substrate is not ferromagnetic at the superconductor's application temperature. Furthermore, chemical species within the substrate should not be able to diffuse into the layer of superconductor material, and the coefficient of thermal
20 expansion of the substrate should be about the same as the superconductor material. Moreover, if the substrate is used for an oxide superconductor, the substrate material should be relatively resistant to oxidation.